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IS 10026-3-3 (1983): Insulating Varnishes Containing Solvents, Part 3: Specifications for Individual Materials, Section 3: Air Drying Varnishes with Temperature Index 130 [ETD 2: Solid Electrical Insulating Materials and Insulation Systems]

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IS : 10026 (Part 3/Sec 3) - 1983
(Superseding IS : 352 -1973 and IS : 8264 - 1976)
(Reaffirmed 1996)

Indian Standard

**SPECIFICATION FOR
INSULATING VARNISHES CONTAINING
SOLVENTS**

**PART 3 SPECIFICATIONS FOR INDIVIDUAL
MATERIALS**

**Section 3 Air Drying Varnishes with Temperature
Index 130**

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**BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002**

Gr 2

August 1983



AMENDMENT NO. 1 JANUARY 1986

TO

IS:10026(Part 3/Sec 3)-1933 SPECIFICATION FOR
INSULATING VARNISHES CONTAINING SOLVENTS

PART 3 SPECIFICATIONS FOR INDIVIDUAL MATERIALS

Section 3 Air Drying Varnishes with
Temperature Index 130

[Page 5, Table 1, Sl No. (iii)] - Substitute
the following for the existing matter under respective
columns:

SL NO.	PROPERTY (2)	TEST METHOD CLAUSE (3)	REQUIREMENT (4)	REMARKS (5)
iii)	Non-volatile matter	5 of IS:10026 (Part 2)- 1982‡	± 2 percent of the nominal value	Nominal value to be agreed between the purchaser and the supplier and shall not be below 40 percent

(ETDC 63)

Reprography Unit, ISI, New Delhi, India

IS : 10026 (Part 3 Sec 3) -1983
(Superseding IS: 352-1973 and IS : 8264-1976)

Indian Standard

**SPECIFICATION FOR
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**PART 3 SPECIFICATIONS FOR INDIVIDUAL
MATERIALS**

**Section 3 Air Drying Varnishes with Temperature
index 130**

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Indian Standard

**SPECIFICATION FOR
INSULATING VARNISHES CONTAINING
SOLVENTS**

**PART 3 SPECIFICATIONS FOR INDIVIDUAL
MATERIALS**

**Section 3 Air Drying Varnishes with Temperature
Index 130**

0. FOREWORD

0.1 This Indian Standard (Part 3/Sec 3) was adopted by the Indian Standards Institution on 24 March 1983, after the draft finalized by the Solid Electrical Insulating Materials Sectional Committee had been approved by the Electrotechnical Division Council.

0.2 This standard deals with insulating varnishes containing solvents. It consists of the following three parts:

Part 1 Definitions and general requirements,

Part 2 Methods of tests, and

Part 3 Specifications for individual materials.

0.3 This standard covers requirements for air drying varnishes with temperature index 130.

0.4 This standard should be read in conjunction with IS: 10026 (Part 1) - 1981 * and IS : 10026 (Part 2) - 1982 *.

0.5 This standard specifies optional requirements for density, flash point, dilution ability and reaction of varnish with copper, which shall be carried out if agreed to between the purchaser and the supplier and shall be within the limits when compared with declared values applying the tolerances given in Table 1.

*Specification for insulating varnishes containing solvents:

Part 1 Definitions and general requirements.

Part 2 Methods of tests.

IS : 10026 (Part 3 Sec 3) - 1983

0.6 This standard supersedes IS: 352-1973* and IS: 8264-1976†.

0.7 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS: 2-1960‡. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard (Part 3/Sec 3) covers the requirements for insulating varnishes containing solvents which dry and/or cure without the application of heat and are of temperature index 130. Insulating varnishes specially designed for resistance to tracking as well as for resistance to mould growth are also covered in this standard.

2. GENERAL REQUIREMENTS

2.1 All materials in a consignment shall comply with the requirements given in IS: 10026 (Part I)-1981§ for colour, condition of supply, and shelf life.

3. PERFORMANCE REQUIREMENTS

3.1 When tested according to the relevant methods described in IS: 10026 (Part 2)-1982§, the material shall conform to the requirements given in Table I.

*Specification for air-drying insulating varnishes for electrical purposes (*first revision*).

†Specification for air-drying and anti-tracking insulating varnishes for electrical purposes.

‡Rules for rounding off numerical values (*revised*).

§Specification for insulating varnishes containing solvents:

Part 1 Definitions and general requirements.

Part 2 Methods of tests.

IS : 10026 (Part 3/Sec 3) - 1983

TABLE 1 SCHEDELE OF CHARACTERISTICS
(*Clauses 0.5 and 3.1*)

SL No.	PROPERTY	CLAUSE or TEST METHOD	REQUIREMENT	REMARKS
(1)	(2)	(3)	(4)	(5)
i)	Density*	3 of IS : 10026 (Part 2)-1982‡	± 0.05 of the nominal value	Nominal value to be agreed between the purchaser and the supplier
ii)	Viscosity†	4 of IS : 10026 (Part 2)-1982‡	± 15 percent of the nominal value	Nominal value to be agreed between the purchaser and the supplier
iii)	Non-volatile matter, Min†	5 of IS : 10026 (Part 2)-1982‡	± 2 percent of the nominal value	Nominal value to be agreed between the purchaser and the supplier
iv)	Drying in thin film †	6 of IS : 10026 (Part 2)-1982‡	Non-tacky in not more than 4 hours	<i>See Note</i>
v)	Flash point, Min*	7 of IS : 10026 (Part 2)-1982‡	23°C	—
vi)	Dilution ability or compatibility, percent, Min*	8 of IS : 10026 (Part 2)-1982‡	100	—
vii)	Reaction of varnish with copper*	11 of IS : 10026 (Part 2)-1982‡	The copper shall not change colour	—
viii)	Flexibility (mandrel test)†	14 of IS : 10026 (Part 2)-1982‡	No cracking of varnish film, detectable by normal vision	—
ix)	Resistance to transformer oil	15 of IS : 10026 (Part 2)-1982‡	—	—
	a) Visual examination		No evidence of attack	—
	b) Total acidity, mg KOH/g, Max		0.40	—

NOTE — Temperature for drying shall not exceed 35°C.

*Optional requirements shall be carried out if agreed to between the purchaser and the supplier.

† Shall be carried out as routine test.

‡Specification for insulating varnishes containing solvents: Part 2 Methods of tests.

(Continued)

TABLE 1 SCHEDULE OF CHARACTERISTICS — *Contd*

SL No.	PROPERTY	CLAUSE or TEST METHOD	REQUIREMENT	REMARKS
(1)	(2)	(3)	(4)	(5)
	c) Sludge value percent by mass, <i>Max</i>		0.10	—
x)	Electric strength, kV/mm, <i>Min</i>	17 of IS : 10026 (Part 2)-1982†		—
	a) In air, at room temperature*		50	—
	b) In air, at 130°C		35	—
	c) After immersion in water*		35	—
	d) In liquid chemicals		To be agreed to between the purchaser and the supplier	The type of chemical and its concentration to be agreed upon between the purchaser and the supplier
xii)	Resistance to tracking, <i>Min</i>	18 of IS : 10026 (Part 2)-1982†	50 drops	See Note 1
xiii)	Volume resistivity, ohm. cm, <i>Min</i> *	19 of IS : 10026 (Part 2)-1982†		
	a) In air		1×10^{12}	
	b) After immersion in water		$1 \times 10^{***}$	After seven days of immersion
xiii)	Thermal endurance	22 of IS : 10026 (Part 2)-1982†	Temperature index not less than 130	a) Reduction in electric strength to 12 kV/mm b) Loss of mass up to 30 percent
xiv)	Resistance to mould growth	Appendix G of IS : 6127-1971‡	To pass the test	See Note 2

NOTE 1 — Applicable for varnishes specially designed for resistance to tracking.

NOTE 2 — Applicable for varnishes specially designed for resistance to mould growth.

• Shall be carried out as routine test.

† Specification for insulating varnishes containing solvents: Part 2 Methods of tests.

‡ Specification for varnish, spar and fungicidal.

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